

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* ISRAEL E. WACHS

---

Appeal No. 1999-2802  
Application 09/076,005

---

ON BRIEF

---

Before WARREN, OWENS and JEFFREY T. SMITH, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

*DECISION ON APPEAL*

This is an appeal from the examiner's final rejection of claims 1, 3-6 and 8-14, which are all of the claims remaining in the application.

*THE INVENTION*

The appellant's claimed invention is directed toward a process for producing formaldehyde from a gas stream

containing a

mixture of hydrogen sulfide and carbon oxide. Claim 1 is  
illustrative:

1. A process for producing formaldehyde from a gas containing carbon oxide and hydrogen sulfide ( $H_2S$ ) comprising contacting the gas stream with a first catalyst comprising a supported metal oxide of a metal selected from the group consisting of vanadium (V), niobium (Nb), molybdenum (Mo), chromium (Cr), rhenium (Re), tungsten (W), manganese (Mn), titanium (Ti), zirconium (Zr) and tantalum (Ta) and mixtures thereof, wherein said support is selected from titania, zirconia, niobia, ceria, tin oxide and mixtures thereof with the proviso that the support and the supported metal are not the same, to convert said carbon oxide and hydrogen sulfide ( $H_2S$ ) to methyl mercaptans and then contacting the methyl mercaptans with a second catalyst selected from a supported metal oxide of a metal selected from the group consisting of vanadium (V), niobium (Nb), molybdenum (Mo), chromium (Cr), rhenium (Re), tungsten (W), manganese (Mn), titanium (Ti), zirconium (Zr), tantalum (Ta) and mixtures thereof, and a bulk metal oxide catalyst selected from the group consisting of molybdates (Mo), chromates (Cr), vanadates (V), rhenates (Re), titanates (Ti), niobates (Nb), tungstates (W), and mixtures thereof, under oxidizing conditions for a time sufficient to convert at least a portion of the methyl mercaptans to formaldehyde and sulfur dioxide, and recovering said formaldehyde.

#### *THE REJECTION*

Claims 1, 3-6 and 8-14 stand rejected under 35 U.S.C.  
§ 112, second paragraph, as being indefinite for failing to  
particularly point out and distinctly claim the subject matter

which the appellant regards as the invention.

*OPINION*

We affirm the aforementioned rejection.

The appellant states that the claims stand or fall together (brief, page 3). We therefore decide the case based upon consideration of one claim, i.e., claim 1. See *In re Ochiai*, 71 F.3d 1565, 1566 n.2, 37 USPQ2d 1127, 1129 n.2 (Fed. Cir. 1995); 37 CFR § 1.192(c)(7)(1997).

The relevant inquiry under 35 U.S.C. § 112, second paragraph, is whether the claim language, as it would have been interpreted by one of ordinary skill in the art in light of the appellants' specification and the prior art, sets out and circumscribes a particular area with a reasonable degree of precision and particularity. See *In re Moore*, 439 F.2d 1232, 1235, 169 USPQ 236, 238 (CCPA 1971).

The examiner's rejection is based upon the term "methyl mercaptans" being indefinite (answer, pages 4-5).

It is undisputed that the art-recognized meaning of "methyl mercaptan" is methanethiol, CH<sub>3</sub>SH. The appellant points out that he is entitled to be his own lexicographer

(brief, page 4; reply brief, page 2), and argues that "[t]he present application uses the term 'methyl mercaptans' to refer as a group to intermediate compounds produced during the claimed method having at least one methyl ( $\text{CH}_3$ ) radical bonded to at least one sulfur (S) atom, such as methanethiol ( $\text{CH}_3\text{SH}$ ), dimethyl sulfide ( $\text{CH}_3\text{SCH}_3$ ), and dimethyl disulfide ( $\text{CH}_3\text{SSCH}_3$ )" (brief, page 3).

The appellant's specification does not define "methyl mercaptans". At one point the specification recites: "methyl mercaptans, (primarily methanethiol ( $\text{CH}_3\text{SH}$ ) and a small amount of dimethyl sulfide ( $\text{CH}_3\text{SCH}_3$ ))" (page 1, lines 15-16), and at another point recites: "methyl mercaptans, (methanethiol ( $\text{CH}_3\text{SH}$ ) and dimethyl sulfide ( $\text{CH}_3\text{SCH}_3$ ))" (page 4, lines 8-9). These disclosures indicate that the appellant considers "methyl mercaptans" to mean "methanethiol and dimethyl sulfide". At two other points, however, the specification recites: "methyl mercaptans, such as methanethiol ( $\text{CH}_3\text{SH}$ ) and dimethyl sulfide ( $\text{CH}_3\text{SCH}_3$ )" (page 2, lines 13-14; page 3, lines 9-10), and at a third point recites: "methyl mercaptans,

(e.g., methanethiol ( $\text{CH}_3\text{SH}$ ) and dimethyl sulfide ( $\text{CH}_3\text{SCH}_3$ ))" (page 6, lines 15-16). These disclosures indicate that methanethiol and dimethyl sulfide are merely examples of methyl mercaptans. Original claim 13 recites: "the methyl mercaptan is selected from  $\text{CH}_3\text{SH}$ ,  $\text{CH}_3\text{SCH}_3$ ,  $\text{CH}_3\text{SSCH}_3$  and mixtures thereof", which indicates that the term "methyl mercaptans" also includes disulfides.<sup>1</sup> As mentioned above, the appellant interprets the specification as indicating that the appellant's methyl mercaptans have at least one methyl radical bonded to at least one sulfur atom. According to this interpretation, the term "methyl mercaptans" can encompass even more compounds than methanethiol, dimethyl sulfide and dimethyl disulfide.

The scope of the term "methyl mercaptans", therefore, is unclear in view of the appellant's specification, and because the appellant, acting as his own lexicographer, has given this term a meaning which is different than its art-recognized meaning, a remedy for this lack of clarity cannot be found by looking to the prior art.

---

<sup>1</sup>Disulfides are not otherwise mentioned in the specification.

Appeal No. 1999-2802  
Application 09/076,005

Accordingly, we conclude that the appellant's claim 1 is indefinite. We therefore affirm the examiner's rejection of claims 1, 3-6 and 8-14.

*DECISION*

The rejection of claims 1, 3-6 and 8-14 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the appellant regards as the invention, is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

*AFFIRMED*

)

Appeal No. 1999-2802  
Application 09/076,005

CHARLES F. WARREN	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
TERRY J. OWENS	)	
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
	)	
JEFFREY T. SMITH	)	
Administrative Patent Judge	)	

tjo/ki

Appeal No. 1999-2802  
Application 09/076,005

Banner and Witcoff, Ltd.  
1001 G. Street, NW  
Washington, DC 20001-4597